IN THE CLAIMS:

Claims 1-33 (Cancelled)

34. (Currently amended) An isolated polynucleotide consisting of the nucleotide sequence set forth in SEQ ID No. 1, 3, 4, 5, 10, 12, 13, or 15 ~~, said nucleotide sequence being derived from a CHD-gene of a bird or a part thereof, said polynucleotide being hybridizable to the genomic DNA of a bird~~.

Claim 35. (Cancelled)

36. (Currently amended) A fragment of the polynucleotide according to claim 34, which distinguishes between the W and A chromosomes ~~gives a specific signal only on the W chromosome~~ upon hybridisation to the genomic DNA of a non-ratite bird that ~~, wherein said genomic DNA~~ has been digested with restriction endonuclease on the basis of the size of hybridising restriction fragment.

Claims 37-39. (Cancelled)

40. (Currently amended) The fragment according to claim 36, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck, cockatoo, owl and parrot.

Claim 41. (Cancelled)

42. (Previously presented) An isolated polynucleotide which hybridises under high stringency conditions to the polynucleotide according to claim 34.

Claim 43. (Cancelled)

44. (Currently amended) The polynucleotide according to claim 42, which distinguishes between the W and A chromosomes ~~gives a specific signal only on the W chromosome~~ upon hybridisation to the genomic DNA of a non-ratite bird that ~~, wherein said genomic DNA~~ has been digested with restriction endonuclease on the basis of the size of hybridising restriction fragment.

Claim 45. (Cancelled)

46. (Currently amended) The polynucleotide according to claim 44, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck, cockatoo, owl and parrot.

Claim 47. (Cancelled)

48. (Currently amended) A method for determining the sex of a non-ratite bird or of an embryo, fetus, cell or tissue of a non-ratite bird, which comprises:

(i) providing a non-ratite bird or non-ratite bird sample as a test bird or bird sample of unknown sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

(ii) providing at least one non-ratite bird or non-ratite bird sample as a first reference bird or bird sample of female sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

(iii) providing at least one non-ratite bird or non-ratite bird sample as a second reference bird or bird sample of male sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

~~(i)~~ (iv) obtaining either

(a) a DNA ~~or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof~~ or,

[redacted]

(b) a cDNA reverse transcribed from RNA ~~of the non-ratite bird, embryo, fetus, cell or tissue thereof~~, or

(c) a cDNA or DNA amplified by cloning or polymerase chain reaction from DNA or RNA ~~of the non-ratite bird, embryo, fetus, cell or tissue thereof~~,

of each of the test bird or bird sample and the female and male reference birds or bird samples,

~~(ii)~~ (v) subjecting (a), (b) or (c) to restriction endonuclease digestion wherein the restriction endonuclease digestion yields hybridisable fragments of CHD-W which are of a different size than ~~to~~ those of CHD-1A ~~CHD1-A~~,

~~(iii)~~ (vi) hybridising the polynucleotide according to claim 34 or a fragment thereof with the product of step ~~(ii)~~ (v) under moderate to high stringency conditions, and ~~(iv)~~ detecting the size of restriction fragments to which the polynucleotide hybridises,

(vii) comparing the restriction banding pattern from the female reference bird or bird sample with the restriction banding pattern from the male reference bird or bird sample to establish the expected pattern for CHD-W and discriminate the pattern for CHD-1A, and

(viii) comparing the restriction banding pattern from the test bird or bird sample with the restriction banding patterns from the female and male reference birds or bird samples to determine whether CHD-W is present in the test bird or sample, which result is indicative of the sex of the test bird or bird sample ~~non-ratite bird, embryo, fetus, cell or tissue thereof~~.

49. (Currently amended) A method for determining the sex of a non-ratite bird or of an embryo, fetus, cell or tissue of a non-ratite bird, which comprises:

(i) providing a non-ratite bird or non-ratite bird sample as a test bird or bird sample of unknown sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

(ii) providing at least one non-ratite bird or non-ratite bird sample as a first reference bird or bird sample of female sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

(iii) providing at least one non-ratite bird or non-ratite bird sample as a second reference bird or bird sample of male sex, wherein the non-ratite bird sample is selected from the group consisting of an embryo, fetus, cell or tissue thereof,

~~(i)~~ (iv) obtaining ~~hybridising~~ either

(a) a DNA ~~or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof~~ or,

(b) a cDNA reverse transcribed from RNA ~~of the non-ratite bird, embryo, fetus, cell or tissue thereof~~, or

(c) a cDNA or DNA amplified by cloning or polymerase chain reaction from DNA or RNA ~~of the non-ratite bird, embryo, fetus, cell or tissue thereof~~,

of each of the test bird or bird sample and the female and male reference birds or bird samples,

~~(ii)~~ (v) subjecting (a), (b) or (c) to restriction endonuclease digestion wherein the restriction endonuclease digestion yields hybridisable fragments of CHD-W which are of a different size than ~~to~~ those of CHD-1A ~~CHD1-A~~,

~~(iii)~~ (vi) hybridising the polynucleotide according to claim 42 or a fragment thereof with the product of step ~~(ii)~~ (v) under moderate to high stringency conditions, and ~~(iv)~~ detecting the size of restriction fragments to which the polynucleotide hybridises,

(vii) comparing the restriction banding pattern from the female reference bird or bird sample with the restriction banding pattern from the male reference bird or bird sample to establish the expected pattern for CHD-W and discriminate the pattern for CHD-1A, and

(viii) comparing the restriction banding pattern from the test bird or bird sample with the restriction banding patterns from the female and male reference birds or bird samples to determine whether CHD-W is present in the test bird or sample, which result is indicative of the sex of the test bird or bird sample ~~non-ratite bird, embryo, fetus, cell or tissue thereof~~.

Claims 50-55. (Cancelled)

[redacted]

56. (Currently amended) An isolated polynucleotide consisting of a nucleotide sequence which encodes a polypeptide having the amino acid sequence of SEQ ID ~~No.~~ NO: ~~6,~~ 7, 8, 9, 11 or 14.

57. (Previously presented) A method for determining the sex of a non-ratite bird or of an embryo, fetus, cell or tissue of a non-ratite bird, which comprises:

(i) obtaining either

(a) a DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof, or

(b) a cDNA reverse transcribed from RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof, or

(c) a cDNA or DNA amplified by cloning or polymerase chain reaction from DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof,

(ii) performing a PCR on said DNA or RNA with primer oligonucleotides capable of amplifying a product from a CHD-W gene which is distinguishable from any product amplified from a CHD-1A gene by said primer oligonucleotides, and

(iii) detecting the presence or absence of a CHD-W specific amplification product which result is indicative of the sex of the non-ratite bird, embryo, fetus, cell or tissue thereof.

58. (Currently amended) A method for determining the sex of a non-ratite bird according to claim 57, wherein the test bird sample comprises a cell or cells from the quill of a feather of said non-ratite bird ~~wherein the CHD-W specific amplification product is distinguishable from any product amplified from a CHD-1A gene by its size or by the presence or absence of a restriction endonuclease cleavage site~~.

59. (Previously presented) A method according to claim 58 wherein nucleotide sequences of the primer oligonucleotides are selected from the group consisting of SEQ ID NOS: 37, 38 and 39.

60. (Cancelled)

61. (New) A method for determining the sex of a non-ratite bird according to claim 48, wherein the test bird sample comprises a cell or cells from the quill of a feather of said non-ratite bird.

62. (New) A method for determining the sex of a non-ratite bird according to claim 49, wherein the test bird sample comprises a cell or cells from the quill of a feather of said non-ratite bird.

63. (New) A method for determining the sex of a non-ratite bird according to claim 48, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck, cockatoo, owl and parrot.

64. (New) A method for determining the sex of a non-ratite bird according to claim 49, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck, cockatoo, owl and parrot.

65. (New) A method for determining the sex of a non-ratite bird according to claim 57, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck, cockatoo, owl and parrot.

66. (New) A method according to claim 57, wherein the CHD-W specific amplification product is distinguishable from any product amplified from a CHD-1A gene by the presence or absence of a restriction endonuclease cleavage site.

67. (New) A fragment of a polynucleotide according to claim 34.